

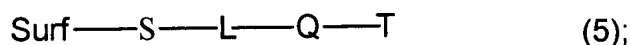
# Amendments to the Claims

Claims 1-18. (Withdrawn)

19. (Currently Amended) A substrate, comprising:

- (i) a surface layer comprising gold, and  
(ii) a plurality of moieties, on at least a portion of said surface layer,  
wherein said moieties are alkanethiolate moieties of formula (5) or ~~and~~

enantiomers of the alkanethiolate moieties of formula (5):



-L- is  $-(\text{A}_x-\text{B}_y-\text{E}_z-\text{D})_w-$ ;

each A, B, E and D are individually  $\text{C}(\text{R}_\text{A}\text{R}_\text{A}')$ -,  $-\text{C}(\text{R}_\text{B}\text{R}_\text{B}')$ -,  $-\text{C}(\text{R}_\text{E}\text{R}_\text{E}')$ -, and  $-\text{C}(\text{R}_\text{D}\text{R}_\text{D}')$ -, respectively;

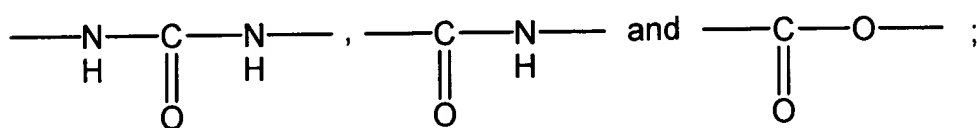
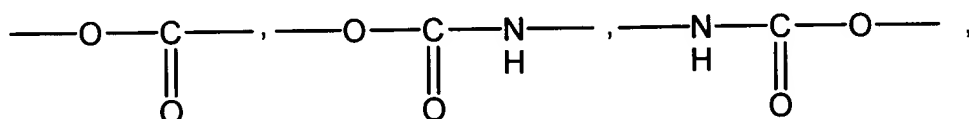
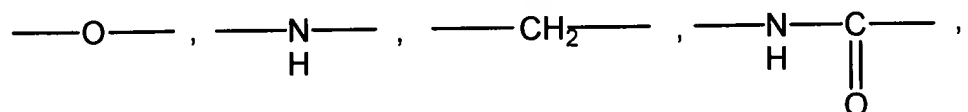
each  $\text{R}_\text{A}$ ,  $\text{R}_\text{B}$ ,  $\text{R}_\text{E}$  and  $\text{R}_\text{D}$  are individually H, or any two of  $\text{R}_\text{A}$ ,  $\text{R}_\text{B}$ ,  $\text{R}_\text{E}$  and  $\text{R}_\text{D}$  together form a bond, or  $\text{R}_\text{A}$ ,  $\text{R}_\text{B}$ ,  $\text{R}_\text{E}$  and  $\text{R}_\text{D}$  together with the atoms to which they are bonded form a six-membered aromatic ring;

each  $\text{R}_\text{A}'$ ,  $\text{R}_\text{B}'$ ,  $\text{R}_\text{E}'$  and  $\text{R}_\text{D}'$  are individually H, or any two of  $\text{R}_\text{A}'$ ,  $\text{R}_\text{B}'$ ,  $\text{R}_\text{E}'$  and  $\text{R}_\text{D}'$  together form a bond, or  $\text{R}_\text{A}'$ ,  $\text{R}_\text{B}'$ ,  $\text{R}_\text{E}'$  and  $\text{R}_\text{D}'$  together with the atoms to which they are bonded form a six-membered aromatic ring;

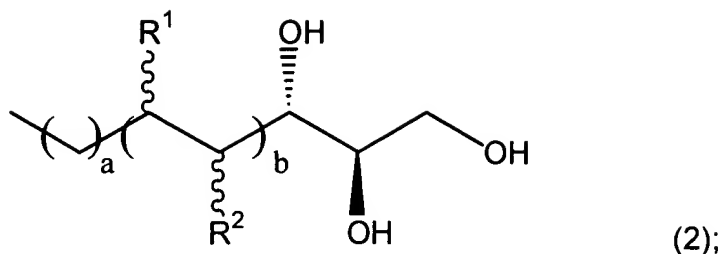
each x, y and z are individually either 0 or 1;

w is 1 to 5;

-Q- is selected from the group consisting of



-T is a moiety of formula (2)



$R^1$  and  $R^2$  are each individually selected from the group consisting of H and OH;

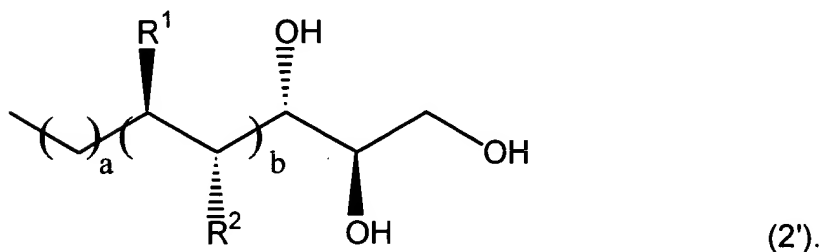
a is 0 to 3;

b is 0 to 3;

~~~~ indicates that the chirality of the carbon atom to which it is attached is either R or S; and

Surf designates where the moiety attaches to said surface.

20. (Original) The substrate of claim 19, further comprising:
  - (iii) a monolayer comprising said moieties, wherein said monolayer does not fail a cell patterning test at 12 days.
21. (Original) The substrate of claim 19, further comprising:
  - (iv) a base, wherein said surface layer is on said base.
22. (Original) The substrate of claim 21, wherein -T is a moiety of formula (2')



23. (Original) The substrate of claim 22, wherein a is 1, b is 1 and at least one of  $R^1$  and  $R^2$  is OH.

24. (Original) The substrate of claim 22, wherein -L- contains 8 to 18 carbon atoms.

25. (Original) The substrate of claim 24, wherein -L- contains 1 or 0 double bonds, or 1 triple bond.

26. (Original) The substrate of claim 22, wherein -L- is an alkylene containing 6 to 18 carbon atoms.

27. (Original) The substrate of claim 22, wherein -Q- is -O- or -CH<sub>2</sub>-.

28. (Original) The substrate of claim 23, wherein -L- is an alkylene containing 6 to 18 carbon atoms, and -Q- is -O-.

29. (Original) A substrate, comprising:  
(i) a surface layer comprising gold, and  
(ii) a monolayer comprising moieties, on at least a portion of said surface layer,  
wherein said moieties are alkanethiolate moieties; and  
said monolayer does not fail a cell patterning test at 12 days.

30. (Original) A cell chip, comprising:  
(A) the substrate of claim 19, and  
(B) cells, on said substrate.

31. (Original) A cell chip, comprising:  
(A) the substrate of claim 20, and  
(B) cells, on said substrate.

32. (Original) A cell chip, comprising:  
(A) the substrate of claim 22, and  
(B) cells, on said substrate.

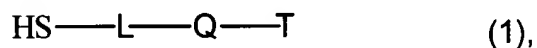
33. (Original) A cell chip, comprising:  
(A) the substrate of claim 24, and  
(B) cells, on said substrate.
34. (Original) A cell chip, comprising:  
(A) the substrate of claim 26, and  
(B) cells, on said substrate.
35. (Original) A cell chip, comprising:  
(A) the substrate of claim 28, and  
(B) cells, on said substrate.
36. (Original) A cell chip, comprising:  
(A) the substrate of claim 29, and  
(B) cells, on said substrate.

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Claims 37-40. (Withdrawn)

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41. (Currently Amended) A method of making a substrate, comprising  
contacting a surface with an alkanethiol of formula 1 or and the enantiomers  
enantiomers of formula (1);



wherein -L- is  $-(\text{A}_x\text{-B}_y\text{-E}_z\text{-D})_w$ ;

each A, B, E and D are individually  $\text{C}(\text{R}_\text{A}\text{R}_\text{A}')$ -,  $-\text{C}(\text{R}_\text{B}\text{R}_\text{B}')$ -,  $-\text{C}(\text{R}_\text{E}\text{R}_\text{E}')$ -, and  $-\text{C}(\text{R}_\text{D}\text{R}_\text{D}')$ -, respectively;

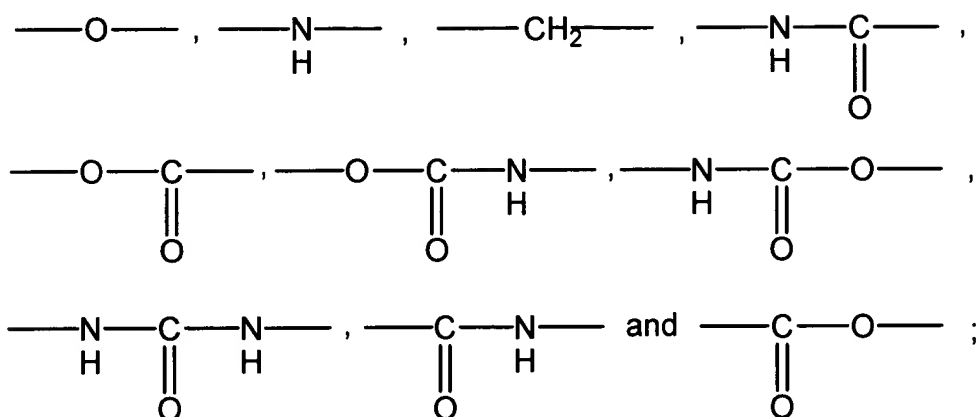
each  $\text{R}_\text{A}$ ,  $\text{R}_\text{B}$ ,  $\text{R}_\text{E}$  and  $\text{R}_\text{D}$  are individually H, or any two of  $\text{R}_\text{A}$ ,  $\text{R}_\text{B}$ ,  $\text{R}_\text{E}$  and  $\text{R}_\text{D}$  together form a bond, or  $\text{R}_\text{A}$ ,  $\text{R}_\text{B}$ ,  $\text{R}_\text{E}$  and  $\text{R}_\text{D}$  together with the atoms to which they are bonded form a six-membered aromatic ring;

each  $\text{R}_\text{A}'$ ,  $\text{R}_\text{B}'$ ,  $\text{R}_\text{E}'$  and  $\text{R}_\text{D}'$  are individually H, or any two of  $\text{R}_\text{A}'$ ,  $\text{R}_\text{B}'$ ,  $\text{R}_\text{E}'$  and  $\text{R}_\text{D}'$  together form a bond, or  $\text{R}_\text{A}'$ ,  $\text{R}_\text{B}'$ ,  $\text{R}_\text{E}'$  and  $\text{R}_\text{D}'$  together with the atoms to which they are bonded form a six-membered aromatic ring;

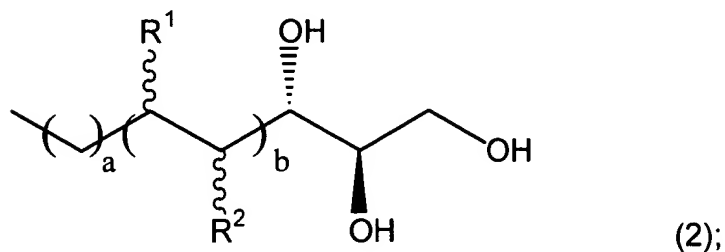
each x, y and z are individually either 0 or 1;

w is 1 to 5;

-Q- is selected from the group consisting of



-T is a moiety of formula (2)



R<sup>1</sup> and R<sup>2</sup> are each individually selected from the group consisting of H and OH;

a is 0 to 3;

b is 0 to 3; and

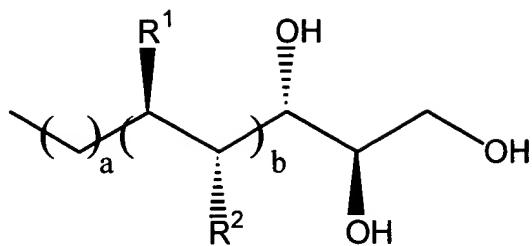
~~~~ indicates that the chirality of the carbon atom to which it is attached is either R or S;

wherein said surface comprises gold.

42. (Cancelled)

43. (Currently Amended) ~~The~~ method of claim 41, ~~making a substrate, comprising contacting a surface with the alkanethiol of claim 2;~~

wherein said ~~surface comprises gold~~ -T is a moiety of formula (2')



(2').

44. (Currently Amended) ~~The~~ method of claim 43 ~~making a substrate,~~  
~~comprising contacting a surface with the alkanethiol of claim 8;~~  
wherein ~~said surface comprises gold~~ a is 1, b is 1, at least one of R<sup>1</sup> and  
R<sup>2</sup> is OH, -L- is an alkylene containing 6 to 18 carbon atoms, and -Q- is -O-.

Claims 45-48. (Withdrawn)

49. (Original) A method of making a cell chip, comprising:  
contacting cells with the substrate of claim 19.

50. (Original) The method of claim 49, further comprising allowing said cells  
to proliferate.

51. (Original) A method of making a cell chip, comprising:  
contacting cells with the substrate of claim 20.

52. (Original) The method of claim 51, further comprising allowing said cells  
to proliferate.

53. (Original) A method of making a cell chip, comprising:  
contacting cells with the substrate of claim 22.

54. (Original) The method of claim 53, further comprising allowing said cells  
to proliferate.

55. (Original) A method of making a cell chip, comprising:  
contacting cells with the substrate of claim 28.

56. (Original) The method of claim 55, further comprising allowing said cells

to proliferate.

57. (Original) A method of making a cell chip, comprising:  
contacting cells with the substrate of claim 29.

*B* 58. (Original) The method of claim 57, further comprising allowing said cells  
to proliferate.

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